

Appendix E

Storm Water Permits Sample Calculations

Permitted Storm Water Facility Sample Calculations

A permitted industrial facility is located within the City of Wilmington west of I-495 and north of E. 12th Street in subbasin B34 (Figure 1-1). All of New Castle County and the City of Wilmington are covered by MS4 permits. The facility's storm water WLAs should be based on the MS4 unit area loads.

Storm water permits are not impacted by the Christina River Basin low-flow TMDLs. Pollutants of concern for storm water permits in Delaware are bacteria, total nitrogen (TN), and total phosphorus (TP). little

Table 2-3 describes land use categories. "Urban" land use is considered appropriate for this facility.

From Table C-12b, *enterococci* baseline loads, the tidal Brandywine Creek – Wilmington (B34) urban area average annual baseline load is $1.40\text{E}+12$ colony forming units (cfu)/year.

From Table C-12a, *enterococci* allocations, the tidal Brandywine Creek – Wilmington (B34) urban area average annual allocation is $1.36\text{E}+12$ cfu/year.

From Table C-12c, *enterococci* percent reductions required, the tidal Brandywine Creek – Wilmington (B34) reduction is 3.05%.

From Table C-1, land use areas for MS4 municipalities, the tidal Brandywine Creek (B34) urban area is Wilmington 1086.40 acres. The average annual *enterococci* unit load is equal to Wilmington B34 urban average annual allocation divided by the Wilmington B34 urban area or $1.29\text{E}+09$ cfu/acre/year. The permit writer just needs to multiply the unit area load by the area of interest to obtain the storm water average annual loads.